

MINOR SOURCE OPERATING PERMIT OFFICE OF AIR QUALITY

Mulzer Crushed Stone, Inc. - Temple Quarry RR1 Old Hwy. 64 English, Indiana 47118

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

This permit is also issued under the provisions of 326 IAC 2-2, 40 CFR 52.21, and 40 CFR 52.124 (Prevention of Significant Deterioration), with conditions listed on the attached pages.

This permit is also issued under the provisions of 326 IAC 2-3 (Emission Offset), with conditions listed on the attached pages

Operation Permit No.: MSOP 025-7603-00004	
Original signed by Paul Dubenetzky Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: October 23, 2001 Expiration Date: October 23, 2006

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SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in Conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary stone crushing source.

Authorized Individual: Brian Peters
Source Address: RR1 Old Hwy. 64, English, Indiana 47118
Mailing Address: P.O. Box 249, Tell City, Indiana 47586
Phone Number: 812 - 547 - 1400
SIC Code: 1422
County Location: Crawford
County Status: Attainment for all criteria pollutants
Source Status: Minor Source Operating Permit
Minor Source, under PSD Rules;
Minor Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

Crushed Stone Operations

- (a) One (1) primary jaw crusher, known as MI601, installed in 1969, equipped with water spray for PM control, enclosed on roof and three (3) sides, capacity: 750 tons of limestone per hour.
- (b) One (1) secondary cone crusher, known as MI602, installed in 1969, replaced in 1999, equipped with water spray for PM control, capacity: 500 tons of limestone per hour.
- (c) One (1) tertiary cone crusher, known as MI603, installed in 1969, constructed in 1979, equipped with water spray for PM control, capacity: 350 tons of limestone per hour.
- (d) One (1) quaternary cone crusher, known as MI605, installed in 1969, replaced in 1984, replaced again in 1991, equipped with water spray for PM control, capacity: 350 tons of limestone per hour.
- (e) One (1) primary screen, known as MK601, installed in 1969, constructed in 1975, equipped with water spray for PM control, enclosed on roof and one (1) side, capacity: 640 tons of limestone per hour.
- (f) Two (2) secondary screens, known as MK603 and MK604, installed in 1969, constructed in 1984, enclosed on roof and three (3) sides, capacity: 500 tons of limestone per hour each.
- (g) Two (2) tertiary screens, known as MK605 and MK606, installed in 1969, constructed in

1984, enclosed on roof and three (3) sides, capacity: 340 tons of limestone per hour each.

- (h) Two (2) quaternary screens, known as MK607, installed in 1969, replaced in 1992 and MK6012, installed in 1969 and constructed in 1990, enclosed on roof, capacity: 200 and 500 tons of limestone per hour, respectively.
- (i) One (1) cleanup screen, known as MK602, installed in 1969, constructed in 1979, capacity: 150 tons of limestone per hour.
- (j) Twenty-five (25) conveyors, known as MJ601 - MJ625, with MJ623 as a radial stacker, with MJ601, MJ602, MJ604, MJ610, MJ612, MJ613, and MJ614, equipped with water spray for PM control, installed in 1969, maximum capacity: 750 tons of limestone per hour.
- (k) Three (3) feeders, known as MK609, equipped with a water spray located at MJ601 with a hopper, MK610, located under the surge pile, installed in 1969, capacity: 750, 400, and 400 tons of limestone per hour, respectively.
- (l) Two (2) railroad bins, installed in 1969, capacity, 50 tons of limestone each.
- (m) Fourteen (14) material storage bins for truck loading from plant, installed in 1969, capacity: 30 tons of limestone each.
- (n) One (1) dump hopper, known as jaw hopper, installed 1969, capacity: 750 tons of limestone per hour.

Wash Plant & Heater

- (o) One (1) wash plant (wet slurry process), installed in 1997, capacity: 250 tons of limestone per hour, previously permitted as Exempt CP 025-6379 Plt ID 025-00004, consisting of:
 - (1) One (1) feeder, known as MK613,
 - (2) One (1) conveyor, known as MJ626,
 - (3) One (1) radial stacker, known as MJ627, and
 - (4) One (1) washer, known as A4-0102
- (p) One (1) used oil-fired heater, known as shop heater CB3500, constructed in 1998, rated at 0.350 million British thermal units per hour.

SECTION B

GENERAL CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Modification to Permit [326 IAC 2]

All requirements and conditions of this operating permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of operating permits pursuant to 326 IAC 2 (Permit Review Rules).

B.5 Minor Source Operating Permit [326 IAC 2-6.1]

- (a) This document shall also become a minor source operating permit pursuant to 326 IAC 2-6.1.
- (b) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1.1-7(Fees).
- (c) Pursuant to 326 IAC 2-6.1-7, the Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in this permit. If IDEM, OAQ, upon receiving a timely and complete permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied. The operation permit issued shall contain as a minimum the conditions in Section C and Section D of this permit.

B.6 Permit Term [326 IAC 2-6.1-7]

This permit is issued for a fixed term of five (5) years from the original date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications or amendments of this permit do not affect the expiration date.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

- (a) The total source nonfugitive potential to emit of all criteria pollutants is less than two hundred fifty (250) tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
- (b) Any change or modification which may increase potential to emit to two hundred fifty (250) tons per year from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

C.2 Hazardous Air Pollutants (HAPs) [326 IAC 2-7]

Any change or modification which may increase potential to emit to ten (10) tons per year of any single hazardous air pollutant, twenty-five (25) tons per year of any combination of hazardous air pollutants from this source, shall cause this source to be considered a major source under Part 70 Permit Program, 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.

C.3 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAQ, upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.4 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1.

- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

C.5 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.6 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)]:

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by a notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.7 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.8 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

C.9 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.10 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on December 6, 1996. The plan consists of spraying water on storage piles and unpaved roads on an as-needed basis.

Testing Requirements

C.11 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

- (a) Compliance testing on new emissions units shall be conducted within sixty (60) days after achieving maximum production rate, but no later than one hundred eighty (180) days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two (2)

weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAQ, within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.12 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.13 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.14 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 1-6]

- (a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:
 - (1) This condition;
 - (2) The Compliance Determination Requirements in Section D of this permit;
 - (3) The Compliance Monitoring Requirements in Section D of this permit;
 - (4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and
 - (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:
 - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and
 - (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.

- (b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.
- (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
 - (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied; or
 - (3) An automatic measurement was taken when the process was not operating; or
 - (4) The process has already returned to operating within "normal" parameters and no response steps are required.
- (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected emissions unit while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected emissions unit.

The documents submitted pursuant to this condition do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.16 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a) (1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.17 Annual Emission Statement [326 IAC 2-6]

- (a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:
 - (1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
 - (2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.
- (b) The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

The submittal by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.18 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.19 General Record Keeping Requirements [326 IAC 2-6.1-2]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.

- (c) Support information shall include, where applicable:
 - (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.20 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
 - (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
 - (2) A malfunction as described in 326 IAC 1-6-2; or
 - (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.

- (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

- (e) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (f) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.21 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.
- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Branch, Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015
- (d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Crushed Stone Operations

- (a) One (1) primary jaw crusher, known as MI601, installed in 1969, equipped with water spray for PM control, enclosed on roof and three (3) sides, capacity: 750 tons of limestone per hour.
- (b) One (1) secondary cone crusher, known as MI602, installed in 1969, replaced in 1999, equipped with water spray for PM control, capacity: 500 tons of limestone per hour.
- (c) One (1) tertiary cone crusher, known as MI603, installed in 1969, constructed in 1979, equipped with water spray for PM control, capacity: 350 tons of limestone per hour.
- (d) One (1) quaternary cone crusher, known as MI605, installed in 1969, replaced in 1984, replaced again in 1991, equipped with water spray for PM control, capacity: 350 tons of limestone per hour.
- (e) One (1) primary screen, known as MK601, installed in 1969, constructed in 1975, equipped with water spray for PM control, enclosed on roof and one (1) side, capacity: 640 tons of limestone per hour.
- (f) Two (2) secondary screens, known as MK603 and MK604, installed in 1969, constructed in 1984, enclosed on roof and three (3) sides, capacity: 500 tons of limestone per hour each.
- (g) Two (2) tertiary screens, known as MK605 and MK606, installed in 1969, constructed in 1984, enclosed on roof and three (3) sides, capacity: 340 tons of limestone per hour each.
- (h) Two (2) quaternary screens, known as MK607, installed in 1969, replaced in 1992 and MK6012, installed in 1969 and constructed in 1990, enclosed on roof, capacity: 200 and 500 tons of limestone per hour, respectively.
- (i) One (1) cleanup screen, known as MK602, installed in 1969, constructed in 1979, capacity: 150 tons of limestone per hour.
- (j) Twenty-five (25) conveyors, known as MJ601 - MJ625, with MJ623 as a radial stacker, with MJ601, MJ602, MJ604, MJ610, MJ612, MJ613, and MJ614, equipped with water spray for PM control, installed in 1969, maximum capacity: 750 tons of limestone per hour.
- (k) Three (3) feeders, known as MK609, equipped with a water spray located at MI601 with a hopper, MK610, located under the surge pile, installed in 1969, capacity: 750, 400, and 400 tons of limestone per hour, respectively.
- (l) Two (2) railroad bins, installed in 1969, capacity, 50 tons of limestone each.
- (m) Fourteen (14) material storage bins for truck loading from plant, installed in 1969, capacity: 30 tons of limestone each.
- (n) One (1) dump hopper, known as jaw hopper, installed 1969, capacity: 750 tons of limestone per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the secondary (MK603 and MK604), tertiary (MK605 and MK606) and quaternary (MK6012) screening operations, described in this section except when otherwise specified in 40 CFR 60 Subpart OOO.

D.1.2 Opacity [40 CFR 60.670 through 60.676, Subpart OOO] [326 IAC 12-1]

Pursuant to the New Source Performance Standards, 326 IAC 12, 40 CFR 60.670 through 60.676, Subpart OOO:

- (a) The secondary (MK603 and MK604), tertiary (MK605 and MK606) and quaternary (MK6012) screening operations are limited to ten percent (10%) opacity or less in twenty-four (24) consecutive readings in a six (6) minute period.
- (b) Compliance shall be determined by 40CFR 60, Appendix A, Method 9.

D.1.3 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rates from the crushed stone facilities shall not exceed the pound per hour rates listed in the following table when operating at the specified process weight rates in tons per hour:

Operation	Process Weight Rate (tons per hour)	Allowable PM Emission Rate (pounds per hour)
Crushed Stone Operations		
Primary Crusher M1601	750	73.9
Secondary Crusher M1602	500	69.0
Tertiary Crusher M1603	350	64.8
Quaternary Crusher M1605	350	64.8
Primary Screen MK601	640	72.0
Secondary Screens MK603 & MK604	500 each	69.0
Tertiary Screens MK605 & MK606	340 each	64.4
Quaternary Screen MK607	200	58.5
Quaternary Screen MK6012	500	69.0
Cleanup Screen MK602	150	55.4
Conveying MJ601 - MJ625 (maximum)	750	73.9

The pounds per hour limitations were calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where}$$

E = rate of emission in pounds per hour; and

P = process weight rate in tons per hour

D.1.4 PM and PM₁₀ [326 IAC 2-2] [40 CFR 52.21]

Any change or modification which may increase potential to emit non-fugitive PM and PM₁₀ after controls from entire source, including crushing, screening and conveying facilities to two hundred and fifty (250) tons per year or more shall cause this source to be major pursuant to Prevention of Significant Deterioration (PSD) and require approval from IDEM, OAQ prior to making the change.

D.1.5 PM₁₀ [326 IAC 2-7]

Any change or modification which may increase potential to emit non-fugitive PM₁₀ before controls from entire source including crushing, screening and conveying facilities to one hundred (100) tons per year or more shall cause this source to be major pursuant 326 IAC 2-7 (Part 70 Permit Program) and require approval from IDEM, OAQ prior to making the change.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.1.6 Particulate Matter (PM) and PM₁₀

The water sprays for PM and PM₁₀ control shall be in operation at all times when the stone crushing processes are in operation.

D.1.7 Testing Requirements [326 IAC 3-6] [326 IAC 12-1] [NSPS Subpart OOO]

Within 180 days after permit issuance, the Permittee shall perform opacity testing for the secondary (MK603 and MK604), tertiary (MK605 and MK606) and quaternary (MK6012) screening operations. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if these facilities are in compliance.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.8 Visible Emissions Notations

- (a) Visible emission notations of the crushing, screening and conveying operations shall be performed during normal daylight operations when exhausting to the atmosphere once per shift. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.9 Record Keeping Requirements

- (a) To document compliance with Condition D.1.8, the Permittee shall maintain records of visible emission notations of the crushing, screening and conveying operations, once per shift.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.10 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.670, Subpart OOO, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM OAQ. The requirements of 40 CFR Part 60 are also federally enforceable.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Wash Plant & Heater

- (o) One (1) wash plant (wet slurry process), installed in 1997, capacity: 250 tons of limestone per hour, Previously permitted as Exempt CP 025-6379 Plt ID 025-00004, consisting of:
- (1) One (1) feeder, known as MK613,
 - (2) One (1) conveyor, known as MJ626,
 - (3) One (1) radial stacker, known as MJ627, and
 - (4) One (1) washer, known as A4-0102
- (p) One (1) used oil-fired heater, known as shop heater CB3500, constructed in 1998, rated at 0.350 million British thermal units per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.2.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rates from the washed plant facilities shall not exceed the pound per hour rates listed in the following table when operating at the specified process weight rates in tons per hour:

The pounds per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

Operation	Process Weight Rate (tons per hour)	Allowable PM Emission Rate (pounds per hour)
Wash Plant		
One (1) Feeder MK613	250	61.0
One (1) Conveyor MJ626	250	61.0
One (1) Radial Stacker MJ627	250	61.0
One (1) Washer A4-0102	250	61.0

D.2.2 PM and PM₁₀ [326 IAC 2-2] [40 CFR 52.21]

Any change or modification which may increase potential to emit non-fugitive PM and PM₁₀ after controls from entire source, including washing facilities to two hundred and fifty (250) tons per year or more shall cause this source to be major pursuant to Prevention of Significant Deterioration (PSD) and require approval from IDEM, OAQ prior to making the change.

D.2.3 PM₁₀ [326 IAC 2-7]

Any change or modification which may increase potential to emit non-fugitive PM₁₀ before controls from entire source including washing facilities to one hundred (100) tons per year or more shall cause this source to be major pursuant 326 IAC 2-7 (Part 70 Permit Program) and require approval from IDEM, OAQ prior to making the change.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.2.4 Particulate Matter (PM) and PM₁₀

The waterwash shall be present for PM and PM₁₀ control and shall be in operation at all times when the wash plant processes are in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

There are no Compliance Monitoring Requirements applicable to these emission units

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES ?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. : _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/20____ _____ AM / PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO₂, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____
INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

**Please note - This form should only be used to report malfunctions
applicable to Rule 326 IAC 1-6 and to qualify for
the exemption under 326 IAC 1-6-4.**

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

* **Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH**

**MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	Mulzer Crushed Stone - Temple Quarry
Address:	RR1 Old Hwy. 64
City:	English, Indiana 47118
Phone #:	812- 547-7921
MSOP #:	025-7603-00004

I hereby certify that Mulzer Crushed Stone - Temple Quarry is

☒ still in operation.

☐ no longer in operation.

I hereby certify that Mulzer Crushed Stone - Temple Quarry is

☒ in compliance with the requirements of MSOP **025-7603-00004**.

☐ not in compliance with the requirements of MSOP **035-7603-00004**.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

**Indiana Department of Environmental Management
Office of Air Quality**

Addendum to the
Technical Support Document for a Minor Source Operating Permit

Source Name: Mulzer Crushed Stone, Inc. - Temple Quarry
Source Location: RR1 Old Hwy. 64, English, Indiana 47118
County: Crawford
Permit No.: MSOP 025-7603-00004
SIC Code: 1422
Permit Reviewer: Mark L. Kramer

On September 19, 2001, the Office of Air Quality (OAQ) had a notice published in the Clarion News, English, Indiana, stating that Mulzer Crushed Stone, Inc. - Temple Quarry had applied for a construction permit to operate a stone crushing source. The notice also stated that OAQ proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAQ has decided to make the following changes to the construction permit: The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded**):

1. The description of item (k) in Condition A.2 and Section D.1 has been revised to clarify that there is only one (1) hopper and it is located under the surge pile as follows:

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

- (k) Three (3) feeders, known as MK609, equipped with a water spray located at MI601 with a hopper, MK610, ~~and MK610~~ located under the surge pile, installed in 1969, capacity: 750, 400, and 400 tons of limestone per hour, respectively.
2. The wash plant and heater descriptions were inadvertently put in Section D.1 and will be deleted since they are included correctly in Section D.2 as follows:

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Crushed Stone Operations

- (k) Three (3) feeders, known as MK609, equipped with a water spray located at MI601 with a hopper, MK610, and ~~MK610~~ located under the surge pile, installed in 1969, capacity: 750, 400, and 400 tons of limestone per hour, respectively.

~~Wash Plant & Heater~~

- ~~(o) One (1) wash plant (wet slurry process), installed in 1997, capacity: 250 tons of limestone per hour, previously permitted as Exempt CP 025-6379 Pit ID 025-00004, consisting of:~~
- ~~(1) One (1) feeder, known as MK613;~~
 - ~~(2) One (1) conveyor, known as MJ626;~~
 - ~~(3) One (1) radial stacker, known as MJ627; and~~
 - ~~(4) One (1) washer, known as A4-0102~~
- ~~(p) One (1) used oil-fired heater, known as shop heater CB3500, constructed in 1998, rated at 0.350 million British thermal units per hour.~~

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

2. Condition D.1.1 has been clarified to cite which facilities are subject to the 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, as follows:

D.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the **secondary (MK603 and MK604), tertiary (MK605 and MK606) and quaternary (MK6012) screening operations** facility described in this section except when otherwise specified in 40 CFR 60 Subpart OOO.

3. In Section D.2, the description for used oil-fired heater, known as shop heater CB3500, has been made consistent with that in listed in the Technical Support Document and in Condition A.2 as follows:

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Wash Plant & Heater

- (o) One (1) wash plant (wet slurry process), installed in 1997, capacity: 250 tons of limestone per hour, Previously permitted as Exempt CP 025-6379 Plt ID 025-00004, consisting of:
 - (1) One (1) feeder, known as MK613,
 - (2) One (1) conveyor, known as MJ626,
 - (3) One (1) radial stacker, known as MJ627, and
 - (4) One (1) washer, known as A4-0102
- (p) One (1) used oil-fired heater, known as shop heater CB3500, **constructed** ~~replaced in kind~~ 1998, rated at 0.350 million British thermal units per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Minor Source Operating Permit

Source Background and Description

Source Name:	Mulzer Crushed Stone, Inc. - Temple Quarry
Source Location:	RR1 Old Hwy. 64, English, Indiana 47118
County:	Crawford
SIC Code:	1422
Operation Permit No.:	MSOP 025-7603-00004
Permit Reviewer:	Mark L. Kramer

The Office of Air Quality (OAQ) has reviewed an application from Mulzer Crushed Stone, Inc. - Temple Quarry relating to the operation of a stone crushing source.

History

The source claims that all original equipment was installed in 1969 and any facilities installed after 1969, except for the wash plant, were considered replacement in kind. Therefore, the source is not subject to New Source Performance Standard, Subpart OOO. In addition, since fugitives do not count in determining if Part 70 is applicable, this source qualifies for an MSOP. In correspondence dated December 3, 1996, Mulzer Crushed Stone, Inc. advised IDEM that the capacities in the existing operating permits reflected the average hourly production rather than the maximum rated capacities. Since this source had been permitted since 1987 and no new unpermitted equipment has been added to the source, the change in rated capacities will not be considered an unpermitted increase in capacity. No changes in rule applicability have occurred due to the change in capacities, other than the allowable PM emission rates pursuant to 326 IAC 6-3-2.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

Crush Stone Operations

- (a) One (1) primary jaw crusher, known as MI601, installed in 1969, equipped with water spray for PM control, enclosed on roof and three (3) sides, capacity: 750 tons of limestone per hour.
- (b) One (1) secondary cone crusher, known as MI402, installed in 1969, replaced in kind in 1999, equipped with water spray for PM control, capacity: 500 tons of limestone per hour.
- (c) One (1) tertiary cone crusher, known as MI603, installed in 1969, replaced in kind in 1979, equipped with water spray for PM control, capacity: 350 tons of limestone per hour.

- (d) One (1) quaternary cone crusher, known as MI605, installed in 1969, replaced in kind in 1984, replaced again in kind in 1991, equipped with water spray for PM control, capacity: 350 tons of limestone per hour.
- (e) One (1) primary screen, known as MK601, installed in 1969, replaced in kind in 1975, equipped with water spray for PM control, enclosed on roof and one (1) side, capacity: 640 tons of limestone per hour.
- (f) Two (2) secondary screens, known as MK603 and MK604, installed in 1969, replaced in kind in 1984, enclosed on roof and three (3) sides, capacity: 500 tons of limestone per hour each.
- (g) Two (2) tertiary screens, known as MK605 and MK606, installed in 1969, replaced in kind in 1984, enclosed on roof and three (3) sides, capacity: 340 tons of limestone per hour each.
- (h) Two (2) quaternary screens, known as MK607 and MK608, installed in 1969, replaced in kind in 1992 and 1990, enclosed on roof, capacity: 200 and 500 tons of limestone per hour, respectively.
- (i) One (1) cleanup screen, known as MK602, installed in 1969, replaced in kind in 1979, capacity: 150 tons of limestone per hour.
- (j) Twenty-five (25) conveyors, known as MJ601 - MJ625, with MJ623 as a radial stacker, with MJ601, MJ602, MJ604, MJ610, MJ612, MJ613, and MJ614, equipped with water spray for PM control, installed in 1969, maximum capacity: 750 tons of limestone per hour.
- (k) Three (3) feeders, known as MK609, equipped with a water spray located at MI601 with a hopper, MK610 and MK610 located under the surge pile, installed in 1969, capacity: 750, 400, and 400 tons of limestone per hour, respectively.
- (l) Two (2) railroad bins, installed in 1969, capacity, 50 tons of limestone each.
- (m) Fourteen (14) material storage bins for truck loading from plant, installed in 1969, capacity: 30 tons of limestone each.
- (n) One (1) dump hopper, known as jaw hopper, installed 1969, capacity: 750 tons of limestone per hour.

Wash Plant & Heater

- (o) One (1) wash plant (wet slurry process), installed in 1997, capacity: 250 tons of limestone per hour, Previously permitted as Exempt CP 025-6379 Plt ID 025-00004, consisting of:
 - (1) One (1) feeder, known as MK613,
 - (2) One (1) conveyor, known as MJ626,
 - (3) One (1) radial stacker, known as MJ627, and
 - (4) One (1) washer, known as A4-0102

- (p) One (1) used oil-fired heater, known as shop heater CB3500, replaced in kind 1998, rated at 0.350 million British thermal units per hour.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment

There are no new facilities proposed at this source during this review process.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) CP 025-6379-00004, issued on August 27, 1996;
- (b) 13-11-90-0035, issued on May 27, 1987;
- (c) 13-11-90-0036, issued on May 27, 1987; and
- (d) 13-11-90-0037, issued on May 27, 1987.

All conditions from previous approvals were incorporated into this permit except the following:

CP 025-6379-00004, issued on August 27, 1996.

The condition stated pursuant to 326 IAC 6-3-2, no person shall operate the limestone washing plant so as to produce, cause, suffer, or allow particulate matter to be emitted in excess of the amount of 0.82 pound per hour.

Reason not incorporated: The proper capacity for the wash plant was 250 tons per hour as used in the emission calculations, not 250 pounds per hour as stated in the equipment description. Therefore, pursuant to 326 IAC 6-3-2, the allowable PM emission rate is 61.0 pounds per hour.

Stack Summary

There are no stacks associated with the emission units that comprise this source.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 6, 1996, with additional information received on December 10, 1996, November 4, 1997, May 3 and 25, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations on pages 1 through 14.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Non-Fugitive Potential To Emit (tons/year)	Entire Source Potential To Emit (tons/year)
PM	143	2,008
PM ₁₀	68.6	649
SO ₂	1.00	1.00
VOC	0.017	0.017
CO	0.085	0.085
NO _x	0.324	0.324

(a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of nonfugitive PM and PM₁₀ are equal to or greater than twenty-five (25) tons per year, but nonfugitive PM₁₀ is less than one hundred (100) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.

(b) Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Actual Emissions

No previous emission data has been received from the source.

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs
Non-Fugitive Emissions Crushing, Conveying and Screening, including Wash Plant	14.2	6.76	-	-	-	-	-
Fugitive Emissions Blasting, Storage, Transportation, and Loading/ Unloading	1,062	419	-	-	-	-	-
Combustion	0.763	0.608	1.00	0.017	0.085	0.324	0.031
Total Emissions	1,077	426	1.00	0.017	0.085	0.324	0.031

County Attainment Status

The source is located in Crawford County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Crawford County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Crawford County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source with total emissions indicated in this permit, MSOP 025-7603-00004, is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant from non-fugitive facilities is less than one hundred (100) tons per year,
- (b) a single hazardous air pollutant (HAP) is less than ten (10) tons per year, and
- (c) any combination of HAPs is less than twenty-five (25) tons per year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

- (a) This source is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.670 through 60.676, Subpart OOO, since the existing source was constructed in 1969 and all subsequent new facilities were replacements in kind. The wash plant, constructed in 1997 is not subject to the requirements as it is not a crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station pursuant to 40 CFR 60.670.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14, 326 IAC 20, 40 CFR 61 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than one hundred (100) tons per year of PM₁₀ in Crawford County. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by July 1 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on December 6, 1996. The plan consists of spraying water on storage piles and unpaved roads on an as-needed basis.

State Rule Applicability - Individual Facilities

326 IAC 6-3-2 (Process Operations)

Pursuant to 326 IAC 6-3-2, the allowable particulate matter (PM) from the nonfugitive facilities listed in the following table shall not exceed the following based upon the process weight rate in the table and calculated by the following:

Interpolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Operation	Process Weight Rate (tons per hour)	Allowable PM Emission Rate (pounds per hour)	Potential PM Emission Rate After Controls (pounds per hour)
Crush Stone Operations			
Primary Crusher M1601	750	73.9	0.379
Secondary Crusher M1402	500	69.0	0.251
Tertiary Crusher M1603	350	64.8	0.176
Quaternary Crusher M1605	350	64.8	0.176
Primary Screen MK601	640	72.0	2.02 total
Secondary Screens MK603 & MK604	500 each	69.0 each	
Tertiary Screens MK605 & MK606	340 each	64.4 each	
Quaternary Screen MK607	200	58.5	
Quaternary Screen MK608	500	69.0	
Cleanup Screen MK602	150	55.4	
Conveying MJ601 - MJ625 (maximum)	750	73.9	0.221 total

Operation	Process Weight Rate (tons per hour)	Allowable PM Emission Rate (pounds per hour)	Potential PM Emission Rate After Controls (pounds per hour)
Wash Plant			
One (1) Feeder MK613	250	61.0	0.012 total
One (1) Conveyor MJ626	250	61.0	
One (1) Radial Stacker MJ627	250	61.0	
One (1) Washer A4-0102	250	61.0	

All facilities comply with the allowable PM emission rates.

Compliance Monitoring Requirements

Even though this source is not subject to the requirements of NSPS Subpart OOO, the allowable PM emissions from the stone crushing operations before controls of 141 tons per year exceed twenty-five (25) tons per year, therefore visible emissions notations will be required. However, although the wash plant's allowable PM emission rate exceeds twenty-five (25) tons per year, the potential PM emissions before controls of 1.53 tons per year and the actual PM emissions are less than twenty-five (25) tons per year, and therefore no compliance monitoring is required for the wash plant.

Conclusion

The operation of this crushed stone plant shall be subject to the conditions of the attached proposed Minor Source Operating Permit 025-7603-00004.

Appendix A: Emission Calculations

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Stone Processing

Company Name: Mulzer Crushed Stone - Temple Quarry
Address City IN Zip: RR1 Old Hwy 64, English, Indiana 47118
MSOP: 025-7603
Plt ID: 025-00004
Reviewer: Mark L. Kramer
Date: December 6, 1996

* * emissions before controls * *
(TSP)

Storage		** see page 2 **			2.48 tons/yr	AP-42 Ch.11.2.3 (Fourth edition, no update)
Transporting		** see page 3 **			1601.47 tons/yr	AP-42 Ch.13.2.2 (Supplement E, 9/98)
Loading & Unloading	750 ton/hr x	0.0016 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	5.31 tons/yr	AP-42 Ch.13.2.4 (Fifth edition, 1/95)
Crushing (primary)	750 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	16.56 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (secondary)	500 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	11.04 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (tertiary)	350 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	7.73 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (quanterary)	350 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	7.73 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Screening	640 ton/hr x	0.0315 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	88.30 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Conveyor Transfer	750 ton/hr x	0.00294 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	9.66 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Blasting	900,000 ton/2470 hr	0.16 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	255.35 tons/yr	Emission factor from SCC 03-05-020-09
Total emissions before controls:					2005.62 tons/yr	

* * emissions after controls * *

Storage	2.48 tons/yr x	10% emitted after controls =	0.25 tons/yr
Transporting	1601.47 tons/yr x	50% emitted after controls =	800.74 tons/yr
Loading & Unloading	5.31 tons/yr x	100% emitted after controls =	5.31 tons/yr
Crushing (primary)	16.56 tons/yr x	10% emitted after controls =	1.66 tons/yr
Crushing (secondary)	11.04 tons/yr x	10% emitted after controls =	1.10 tons/yr
Crushing (tertiary)	7.73 tons/yr x	10% emitted after controls =	0.77 tons/yr
Crushing (quanterary)	7.73 ton/hr x	10% emitted after controls =	0.77 tons/yr
Screening	88.30 tons/yr x	10% emitted after controls =	8.83 tons/yr
Conveying	9.66 tons/yr x	10% emitted after controls =	0.97 tons/yr
Blasting	255.35 tons/yr x	100% emitted after controls =	255.35 tons/yr
Total emissions after controls:			1075.75 tons/yr

Emission factor from SCC 03-05-020-09

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* * fugitive vs. nonfugitive * *

Storage	2.48 tons/yr x	10% emitted after controls =	0.25 tons/yr
Transporting	1601.47 tons/yr x	50% emitted after controls =	800.74 tons/yr
Loading / Unloading	5.31 tons/yr x	100% emitted after controls =	5.31 tons/yr
Blasting	255.35 tons/yr x	100% emitted after controls =	255.35 tons/yr
Total fugitive emissions:			1061.65 tons/yr
Crushing (primary)	16.56 tons/yr x	10% emitted after controls =	1.66 tons/yr
Crushing (secondary)	11.04 tons/yr x	10% emitted after controls =	1.10 tons/yr
Crushing (tertiary)	7.73 tons/yr x	10% emitted after controls =	0.77 tons/yr
Crushing (quarternary)	7.73 tons/yr x	10% emitted after controls =	0.77 tons/yr
Screening	88.30 tons/yr x	10% emitted after controls =	8.83 tons/yr
Conveying:	9.66 tons/yr x	10% emitted after controls =	0.97 tons/yr
Total nonfugitive emissions:			14.10 tons/yr

* * storage * *

Storage emissions, which result from wind erosion, are determined by the following calculations:

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 1.85 \text{ lb/acre/day}$$

where s = 1.6 % silt content of material

p = 125 days of rain greater than or equal to 0.01 inches

f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (365 \text{ day/yr})$$

$$= 2.4828244 \text{ tons/yr}$$

where sc = 200,000 tons storage capacity

PM

* * unpaved roads * *

Over the Road Tractor Trailer Trucks

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} & 10 \text{ trip/hr} \times \\ & 0.3 \text{ mile/trip} \times \\ & 2 \text{ (round trip) } \times \\ & 8760 \text{ hr/yr} = 52560 \text{ miles per year} \end{aligned}$$

Method 1:

$$E_f = k \cdot \left[\frac{(s/12)^{0.8} \cdot [(W/3)^b]}{(M/0.2)^c} \right]$$

= 13.66 lb/mile

where k = 10 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))
s = 4.8 mean % silt content of unpaved roads
b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 24.25 tons average vehicle weight
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

$$\frac{13.66 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 358.98 \text{ tons/yr}$$

This method has a lower quality rating than Method 1.

Method 2

$$E_f = \left\{ k \cdot \left[\frac{(s/12)^{0.8} \cdot [(W/3)^b]}{(M_{dry}/0.2)^c} \right] \cdot \frac{(365-p)}{365} \right\}$$

= 8.98 lb/mile

(particle size multiplier for PM-10) (k=10 for PM-30 or TSP)
s = 4.8 mean % silt content of unpaved roads
b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 24.25 tons average vehicle weight
M_{dry} = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)
p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\frac{8.98 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 236.04 \text{ tons/yr}$$

PM

* * unpaved roads * *

Over the Ropad Triaxle

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} & 10 \text{ trip/hr} \times \\ & 0.3 \text{ mile/trip} \times \\ & 2 \text{ (round trip) } \times \\ & 8760 \text{ hr/yr} = 52560 \text{ miles per year} \end{aligned}$$

Method 1:

$$E_f = k \cdot \left[\frac{(s/12)^{0.8} \cdot [(W/3)^b]}{(M/0.2)^c} \right]$$

= 13.30 lb/mile

where k = 10 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))
s = 4.8 mean % silt content of unpaved roads

This method has a lower quality rating than Method 1.

Method 2

$$E_f = \left\{ k \cdot \left[\frac{(s/12)^{0.8} \cdot [(W/3)^b]}{(M_{dry}/0.2)^c} \right] \cdot \frac{(365-p)}{365} \right\}$$

= 8.75 lb/mile

(particle size multiplier for PM-10) (k=10 for PM-30 or TSP)
s = 4.8 mean % silt content of unpaved roads

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b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 23 tons average vehicle weight
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

$$\frac{13.30 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 349.60 \text{ tons/yr}$$

PM

** unpaved roads **

35-ton Stockpile Haul Truck

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} &14 \text{ trip/hr} \times \\ &0.09 \text{ mile/trip} \times \\ &2 \text{ (round trip)} \times \\ &8760 \text{ hr/yr} = 22075.2 \text{ miles per year} \end{aligned}$$

Method 1: $E_f = k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M/0.2)^c]$
= 19.26 lb/mile

where k = 10 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 48.2 tons average vehicle weight

M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

$$\frac{19.26 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 506.10 \text{ tons/yr}$$

b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 23 tons average vehicle weight

Mdry = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\frac{8.75 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 229.88 \text{ tons/yr}$$

This method has a lower quality rating than Method 1.

Method 2: $E_f = \{k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(Mdry/0.2)^c] \cdot [(365-p)/365]\}$
= 12.66 lb/mile

where k = 10 (particle size multiplier for PM-10) (k=10 for PM-30 or TSP)

s = 4.8 mean % silt content of unpaved roads

b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 48.2 tons average vehicle weight

Mdry = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\frac{12.66 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 332.78 \text{ tons/yr}$$

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PM

* * unpaved roads * *

60-ton Stripping Haul Truck

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} & 2.5 \text{ trip/hr} \times \\ & 0.08 \text{ mile/trip} \times \\ & 2 \text{ (round trip) } \times \\ & 8760 \text{ hr/yr} = 3504 \text{ miles per year} \end{aligned}$$

Method 1:

$$E_f = k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M/0.2)^c]$$

$$= 24.34 \text{ lb/mile}$$

where k = 10 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 77 tons average vehicle weight

M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

$$\begin{aligned} & 24.34 \text{ lb/mi} \times 52560 \text{ mi/yr} = 639.67 \text{ tons/yr} \\ & \text{2000 lb/ton} \end{aligned}$$

This method has a lower quality rating than Method 1.

Method 2

$$E_f = \{k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M_{dry}/0.2)^c] \cdot [(365-p)/365]\}$$

$$= 16.00 \text{ lb/mile}$$

where k = 10 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 77 tons average vehicle weight

Mdry = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\begin{aligned} & 16.00 \text{ lb/mi} \times 52560 \text{ mi/yr} = 420.61 \text{ tons/yr} \\ & \text{2000 lb/ton} \end{aligned}$$

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MSOP: 025-7603

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50-ton Crushing Haul Truck

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} & 15 \text{ trip/hr} \times \\ & 0.32 \text{ mile/trip} \times \\ & 2 \text{ (round trip)} \times \\ & 8760 \text{ hr/yr} = 84096 \text{ miles per year} \end{aligned}$$

This method has a lower quality rating than Method 1.

Method 1:

$$E_f = k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M/0.2)^c]$$

= 22.12 lb/mile

where k = 10 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))
s = 4.8 mean % silt content of unpaved roads
b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 63.57 tons average vehicle weight
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)
125

$$\frac{22.12 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 581.22 \text{ tons/yr}$$

Method 2

$$E_f = \{k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M_{dry}/0.2)^c] \cdot [(365-p)/365]\}$$

= 14.54 lb/mile

where k = 10 (particle size multiplier for PM-10) (k=10 for PM-30 or TSP)
s = 4.8 mean % silt content of unpaved roads
b = 0.5 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.4 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 63.57 tons average vehicle weight
M_{dry} = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)
p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\frac{14.54 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 382.17 \text{ tons/yr}$$

Total Trucks: 1601.47 tons/yr

* * aggregate handling * *

The following calculations determine the amount of emissions created by truck loading and unloading of aggregate, based on 8760 hours of use and AP-42, Ch 13.2.4 (Fifth edition, 1/95).

$$E_f = k \cdot (0.0032)^U \cdot (U/5)^{1.3} / (M/2)^{1.4}$$

= 0.0016 lb/ton

where k = 0.74 (particle size multiplier)
U = 10 mile/hr mean wind speed
M = 5 % material moisture content

Appendix A: Emission Calculations

Stone Processing

Company Name: Mulzer Crushed Stone - Temple Quarry
Address City IN Zip: RR1 Old Hwy 64, English, Indiana 47118
MSOP: 025-7603
Plt ID: 025-00004
Reviewer: Mark L. Kramer
Date: December 6, 1996

* * emissions before controls * *

PM10

Storage		** see page 2 **			2.48 tons/yr	AP-42 Ch.11.2.3 (Fourth edition, no update)
Transporting		** see page 3 **			316.36 tons/yr	AP-42 Ch.13.2.2 (Supplement E, 9/98)
Loading & Unloading	750 ton/hr x	0.0016 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	5.31 tons/yr	AP-42 Ch.13.2.4 (Fifth edition, 1/95)
Crushing (primary)	750 ton/hr x	0.0024 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	7.88 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (secondary)	500 ton/hr x	0.0024 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	5.26 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (tertiary)	350 ton/hr x	0.0024 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	3.68 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (quanterary)	350 ton/hr x	0.0024 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	3.68 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Screening	640 ton/hr x	0.015 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	42.05 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Conveyor Transfer	750 ton/hr x	0.0014 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	4.60 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Blasting	900,000 ton/2470 hr	0.16 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	255.35 tons/yr	Emission factor from SCC 03-05-020-09
Total emissions before controls:					646.66 tons/yr	

* * emissions after controls * *

Storage	2.48 tons/yr x	10% emitted after controls =	0.25 tons/yr
Transporting	316.36 tons/yr x	50% emitted after controls =	158.18 tons/yr
Loading & Unloading	5.31 tons/yr x	100% emitted after controls =	5.31 tons/yr
Crushing (primary)	7.88 tons/yr x	10% emitted after controls =	0.79 tons/yr
Crushing (secondary)	5.26 tons/yr x	10% emitted after controls =	0.53 tons/yr
Crushing (tertiary)	3.68 tons/yr x	10% emitted after controls =	0.37 tons/yr
Crushing (quanterary)	3.68 ton/hr x	10% emitted after controls =	0.37 tons/yr
Screening	42.05 tons/yr x	10% emitted after controls =	4.20 tons/yr
Conveying	4.60 tons/yr x	10% emitted after controls =	0.46 tons/yr
Blasting	255.35 tons/yr x	100% emitted after controls =	255.35 tons/yr
Total emissions after controls:			425.81 tons/yr

Emission factor from SCC 03-05-020-09

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* * fugitive vs. nonfugitive * *

Storage	2.48 tons/yr x	10% emitted after controls =	0.25 tons/yr
Transporting	316.36 tons/yr x	50% emitted after controls =	158.18 tons/yr
Loading / Unloading	5.31 tons/yr x	100% emitted after controls =	5.31 tons/yr
Blasting	255.35 tons/yr x	100% emitted after controls =	255.35 tons/yr
Total fugitive emissions:			419.09 tons/yr
Crushing (primary)	7.88 tons/yr x	10% emitted after controls =	0.79 tons/yr
Crushing (secondary)	5.26 tons/yr x	10% emitted after controls =	0.53 tons/yr
Crushing (tertiary)	3.68 tons/yr x	10% emitted after controls =	0.37 tons/yr
Crushing (quarternary)	3.68 tons/yr x	10% emitted after controls =	0.37 tons/yr
Screening	42.05 tons/yr x	10% emitted after controls =	4.20 tons/yr
Conveying:	4.60 tons/yr x	10% emitted after controls =	0.46 tons/yr
Total nonfugitive emissions:			6.71 tons/yr

* * storage * *

Storage emissions, which result from wind erosion, are determined by the following calculations:

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 1.85 \text{ lb/acre/day}$$

where s = 1.6 % silt content of material

p = 125 days of rain greater than or equal to 0.01 inches

f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (365 \text{ day/yr})$$

$$= 2.4828244 \text{ tons/yr}$$

where sc = 200,000 tons storage capacity

PM-10

* * unpaved roads * *

Over the Road Tractor Trailer Trucks

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} & 10 \text{ trip/hr} \times \\ & 0.3 \text{ mile/trip} \times \\ & 2 \text{ (round trip) } \times \\ & 8760 \text{ hr/yr} = 52560 \text{ miles per year} \end{aligned}$$

Method 1: $E_f = k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M/0.2)^c]$
 $= 2.88 \text{ lb/mile}$

where k = 2.6 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))
s = 4.8 mean % silt content of unpaved roads
b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 24.25 tons average vehicle weight
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

$$\frac{2.88 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 75.73 \text{ tons/yr}$$

This method has a lower quality rating than Method 1.

Method 2: $E_f = \{k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M_{dry}/0.2)^c] \cdot [(365-p)/365]\}$
 $= 1.89 \text{ lb/mile}$

(particle size multiplier for PM-10) (k=10 for PM-30 or TSP)
where k = 2.6
s = 4.8 mean % silt content of unpaved roads
b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 24.25 tons average vehicle weight
M_{dry} = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)
p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\frac{1.89 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 49.80 \text{ tons/yr}$$

PM-10

* * unpaved roads * *

Over the Ropad Triaxle

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} & 10 \text{ trip/hr} \times \\ & 0.3 \text{ mile/trip} \times \\ & 2 \text{ (round trip) } \times \\ & 8760 \text{ hr/yr} = 52560 \text{ miles per year} \end{aligned}$$

Method 1: $E_f = k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M/0.2)^c]$
 $= 2.82 \text{ lb/mile}$

where k = 2.6 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))
s = 4.8 mean % silt content of unpaved roads

This method has a lower quality rating than Method 1.

Method 2: $E_f = \{k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M_{dry}/0.2)^c] \cdot [(365-p)/365]\}$
 $= 1.86 \text{ lb/mile}$

(particle size multiplier for PM-10) (k=10 for PM-30 or TSP)
where k = 2.6
s = 4.8 mean % silt content of unpaved roads

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b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 23 tons average vehicle weight
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

2.82 lb/mi x 52560 mi/yr = 74.15 tons/yr
2000 lb/ton

PM-10

* * unpaved roads * *

35-ton Stockpile Haul Truck

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

14 trip/hr x
0.09 mile/trip x
2 (round trip) x
8760 hr/yr = 22075.2 miles per year

Method 1: $E_f = k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M/0.2)^c]$
= 3.79 lb/mile

where k = 2.6 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 48.2 tons average vehicle weight

M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

125
3.79 lb/mi x 52560 mi/yr = 99.68 tons/yr
2000 lb/ton

b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 23 tons average vehicle weight

Mdry = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

1.86 lb/mi x 52560 mi/yr = 48.75 tons/yr
2000 lb/ton

This method has a lower quality rating than Method 1.

Method 2 $E_f = \{k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(Mdry/0.2)^c] \cdot [(365-p)/365]$
= 2.49 lb/mile

where k = 2.6 (particle size multiplier for PM-10) (k=10 for PM-30 or TSP)

s = 4.8 mean % silt content of unpaved roads

b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 48.2 tons average vehicle weight

Mdry = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

2.49 lb/mi x 52560 mi/yr = 65.54 tons/yr
2000 lb/ton

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PM-10

* * unpaved roads * *

60-ton Stripping Haul Truck

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} & 2.5 \text{ trip/hr} \times \\ & 0.08 \text{ mile/trip} \times \\ & 2 \text{ (round trip) } \times \\ & 8760 \text{ hr/yr} = \end{aligned} \quad 3504 \text{ miles per year}$$

Method 1:

$$E_f = k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M/0.2)^c]$$

$$= 4.57 \text{ lb/mile}$$

where k = 2.6 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 77 tons average vehicle weight

M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

125

$$\frac{4.57 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 120.22 \text{ tons/yr}$$

This method has a lower quality rating than Method 1.

Method 2

$$E_f = \{k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M_{dry}/0.2)^c] \cdot [(365-p)/365]\}$$

$$= 3.01 \text{ lb/mile}$$

where k = 2.6 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)

c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)

W = 77 tons average vehicle weight

Mdry = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\frac{3.01 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 79.05 \text{ tons/yr}$$

PM-10

50-ton Crushing Haul Truck

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned} & 15 \text{ trip/hr} \times \\ & 0.32 \text{ mile/trip} \times \\ & 2 \text{ (round trip)} \times \\ & 8760 \text{ hr/yr} = 84096 \text{ miles per year} \end{aligned}$$

Method 1:

$$E_f = k \left[\left(\frac{s}{12} \right)^{0.8} \left(\frac{W}{3} \right)^b \right] / \left[\left(\frac{M}{0.2} \right)^c \right]$$

= 4.24 lb/mile

where k = 2.6 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))
s = 4.8 mean % silt content of unpaved roads
b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 63.57 tons average vehicle weight
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

$$\frac{4.24 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 111.35 \text{ tons/yr}$$

This method has a lower quality rating than Method 1.

Method 2

$$E_f = \left\{ k \left[\left(\frac{s}{12} \right)^{0.8} \left(\frac{W}{3} \right)^b \right] / \left[\left(\frac{M_{dry}}{0.2} \right)^c \right] \right\} \left[\frac{365-p}{365} \right]$$

= 2.79 lb/mile

where k = 2.6 (particle size multiplier for PM-10 (k=10 for PM-30 or TSP))
s = 4.8 mean % silt content of unpaved roads
b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 63.57 tons average vehicle weight
M_{dry} = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)
p = 125 number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\frac{2.79 \text{ lb/mi} \times 52560 \text{ mi/yr}}{2000 \text{ lb/ton}} = 73.22 \text{ tons/yr}$$

Total Trucks: 316.365 tons/yr

**** aggregate handling ****

The following calculations determine the amount of emissions created by truck loading and unloading of aggregate, based on 8760 hours of use and AP-42, Ch 13.2.4 (Fifth edition, 1/95).

$$E_f = k (0.0032) \left(\frac{U}{5} \right)^{1.3} / \left(\frac{M}{2} \right)^{1.4}$$

= 0.0016 lb/ton

where k = 0.74 (particle size multiplier)
U = 10 mile/hr mean wind speed
M = 5 % material moisture content

Wash Plant

PM = PM10

Before

Conveyor Transfer 250 ton/hr x 0.0014 lb/ton / 2000 lb/ton x 8760 hr/yr = 1.53 tons/yr

AP-42 Ch.11.19.2 (Fifth edition, 1/95)

After Controls

Conveying: 1.533 tons/yr x 0.0340 emitted after controls = 0.052 tons/yr

**Appendix A: Emissions Calculations
Waste Oil Combustion
Small Boiler**

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Company Name: Mulzer Crushed Stone - Temple Quarry
Address City IN Zip: RR1 Old Hwy 64, English, Indiana 47118
MSOP: 025-7603
Plt ID: 025-00004
Reviewer: Mark L. Kramer
Date: December 6, 1996

Used Oil Shop Heater

Heat Input Capacity
MMBtu/hr

0.350

Potential Oil Throughput
kgals/year

34.067

A = Weight % Ash =	0.70
L = Weight % Lead =	0.03
S = Weight % Sulfur =	0.40

Pollutant							
Emission Factor in lb/kgal	PM*	PM10*	SO2	NOx	TOC	CO	Pb
	44.8 (64A)	35.7 (51A)	58.8 (147S)	19.0	1.00	5.00	1.65 (55L)
Potential Emission in tons/yr	0.763	0.608	1.00	0.324	0.017	0.085	0.028

*No information was given in AP-42 regarding whether the PM/PM10 emission factors included filterable and condensable PM.

Methodology

Emission Factor Units are lb/1000 gal

A = weight% ash in fuel, L = weight% lead in fuel, S = weight % sulfur in fuel

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.139 MM Btu

Emission Factors from AP-42, Chapter 1.11, SCC 1-03-013-02 (Supplement B 10/96)

Emission (tons/yr) = Throughput kgals per year x Emission Factor (lb/kgal)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 14 for HAPs calculations

Appendix A: Emissions Calculations
Waste Oil Combustion
Small Boiler
HAPs Calculations

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Company Name: Mulzer Crushed Stone - Temple Quarry
Address City IN Zip: RR 1 Old Hwy 64, English, Indiana 47118
MSOP: 025-7603
Plt ID: 025-00004
Reviewer: Mark L. Kramer
Date: December 6, 1996

	Pollutant					
Emission Factor in lb/kgal	Arsenic 1.1E-01	Cadmium 9.3E-03	Chromium 2.0E-02	Manganese 6.8E-02	Nickel 1.1E-02	Cobalt 2.1E-04
Potential Emission in tons/yr	1.87E-03	1.58E-04	3.41E-04	1.16E-03	1.87E-04	3.58E-06

Methodology is the same as previous page.

		Summary				
		Pollutant		tons/yr		
Before Controls Non Fugitive Fugitive Combustion	Total	PM*	PM10*	SO2	NOx	VOC
						CO
		142.53	68.63	0.000	0.000	0.000
		1864.6	579.5	0.000	0.000	0.000
		0.763	0.608	1.000	0.324	0.017
Total		2008	649	1.000	0.324	0.017

		Summary				
		Pollutant		tons/yr		
After Controls Non Fugitive Fugitive Combustion	Total	PM*	PM10*	SO2	NOx	VOC
						CO
		14.152	6.762	0.000	0.000	0.000
		1061.7	419.1	0.000	0.000	0.000
		0.763	0.608	1.000	0.324	0.017
Total		1077	426	1.000	0.324	0.017